

REMARKS

Applicants respectfully request consideration of the subject application as amended herein. This Amendment is submitted in response to an Office Action mailed on March 13, 2002. In this Amendment, claims 1, 2, 7-9, 13, 19, 24 and 29 have been amended.

The Examiner rejected claims 1-3, 5, 7-9, 11 and 13-28 under 35 U.S.C. § 103(a) as being unpatentable over Fan, et al. (Segmentation and Classification of Multimedia Document, IEEE Workshop, pages 416-430) in view of Sasaki (U.S. Patent No. 5,812,995). Claims 4 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fan, et al., in view of Sasaki and further in view of Morita, et al., (U.S. Patent No. 5,832,470). Claims 6 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fan, et al., in view of Sasaki and further in view of Ho, et al., (Decision Combination in Multiple Classifier Systems, IEEE Transactions on Pattern Analysis and Machine Intelligence). Claims 29-32 were rejected as being unpatentable over Mahoney (U.S. Patent No. 5,889,886) in view of Sasaki, et al. As discussed below, the pending claims are patentable over the above references.

Fan discloses a system for segmenting and classifying multimedia documents. The system segments the document into several blocks, with each block representing one type of media. A feature-based classification algorithm is then employed to recognize each segmented block. Once it is determined whether the segmented block is text, image or graphic, a compression technique that is the most efficient for this type of media is used, thus achieving the maximum compressing ratio for the document. As a result, the time required for transmitting the document and the space required for storing document are reduced.

With respect to claim 1, Fan lacks a first directory structure mirroring a second directory structure and a document classification profile associated with the first directory structure that is defined according to a classification approach used by the user with respect to the second directory structure. Further, Fan does not teach or suggest storing the document in the first directory structure based on a classification of the document and the document classification profile, as does the presently claimed invention.

Sasaki does not help Fan. Sasaki discloses a document filing system in which documents are registered, preserved, managed and retrieved. As described in the Summary Section of Sasaki, the system of Sasaki provides “an electronic document filing system in which a plurality of documents are arbitrarily classified in a hierarchical structure regardless of attributes of the documents” (col. 2, lines 61-66) (emphasis added). This feature of Sasaki is reiterated throughout the patent. For example, the Abstract states that “classification attributes have no connection with contents of any document,” or the Detailed Description Section of Sasaki states that “the classification attribute information are determined regardless of the document attributes peculiar to the documents” (col. 8, lines 16-18).

In the presently claimed invention, in contrast, a document is classified based on its textual content and graphical content. This classification is then used to store the document in a directory structure. That is, in the presently claimed invention, the documents are stored in a particular directory of the directory structure based on their textual and graphical content. Sasaki lacks this pertinent feature of the presently claimed invention. Further, Sasaki lacks a first directory structure mirroring a second directory structure and a document classification profile associated with the first directory structure that is defined according to a classification approach used by the user with respect to the

second directory structure. As such, Sasaki does not teach or suggest storing the document in the first directory structure based on a classification of the document and the document classification profile, as does the presently claimed invention. Thus, Sasaki does not teach or suggest at least the features of the presently claimed invention that are lacking in Fan.

Furthermore, each of the additional references cited by the Examiner that include Morita, Ho and Mahoney do not teach or suggest at least the features of the presently claimed invention that are lacking in both Fan and Sasaki.

Accordingly, the references cited by the Examiner taken alone or in combination lack at least the features that are included in the following claim language of claim 1:

...storing the electronic document in a first directory structure based on the classification of the document and a document classification profile associated with the first directory structure, the first directory structure mirroring a second directory structure and the document classification profile being defined according to a classification approach used by the user with respect to the second directory structure.

This language is also included in the independent claim 9 and similar language is included in the independent claim 29. Accordingly, Applicants respectfully submit that Applicants' invention as claimed in independent claims 1, 9 and 29 and corresponding dependent claims 1-8, 10-12 and 30-32 is not rendered obvious by the above references, and respectfully request the withdrawal of the rejection under 35 U.S.C. § 103(a).

With respect to claim 13, as discussed above in conjunction with claim 1, neither Fan nor Sasaki teaches or suggests having a mirror directory structure that is created based on a pre-existing directory structure and a document classification profile that reflects a classification approach used by the user with respect to the pre-existing directory structure. Further, each of the above references lacks the feature of the

presently claimed invention that involves placing an electronic document in the mirror directory structure based on the document classification profile of the directory and textual and graphical profile of the electronic document to resemble the classification approach of the user with respect to the pre-existing directory structure.

Furthermore, each of the additional references cited by the Examiner that include Morita, Ho and Mahoney lack at least the features of the presently claimed invention that are lacking in both Fan and Sasaki.

Accordingly, the references cited by the Examiner taken alone or in combination do not teach or suggest at least the features that are included in the following claim language of claim 13:

...analyzing documents in a pre-existing document directory structure to determine a document classification profile of the pre-existing document directory structure, the document classification profile of the pre-existing document directory structure reflecting a classification approach of a user with respect to the pre-existing document directory structure;

generating a mirror directory structure based on the pre-existing document directory structure;....

placing the electronic document in the mirror directory structure based on the document classification profile of the pre-existing document directory structure, the textual profile of the document, and the graphical profile of the document to resemble the classification approach of the user.

This language is also included in the independent claims 19 and 24. Accordingly, Applicants respectfully submit that Applicants' invention as claimed in independent claims 13, 19 and 24 and corresponding dependent claims 14-18, 20-23 and 25-28 is not rendered obvious by the above references, and respectfully request the withdrawal of the rejection under 35 U.S.C. § 103(a).

In view of the foregoing amendments and remarks, Applicants respectfully submit that the pending claims are in condition for allowance. Applicants respectfully request reconsideration of the application and allowance of the pending claims.

If the Examiner determines the prompt allowance of these claims could be facilitated by a telephone conference, the Examiner is invited to contact Marina Portnova at (408) 720-8300.

Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicant hereby requests such extension.

Respectfully submitted,

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VERSION OF CLAIMS WITH MARKINGS:

1. (Amended) A method for document classification comprising:
analyzing textual content and graphical content of a previously unclassified electronic document to determine a textual profile and a graphical profile of the electronic document;
generating a classification of the document based on the textual profile and the graphical profile; [and]
storing the electronic document in a [pre-existing] first directory structure based on the classification of the document and a document classification profile associated with the [pre-existing] first directory structure; and
wherein the first directory structure mirrors a second directory structure, and the document classification profile is defined according to [resemble] a classification approach of [the] a user with respect to the second directory structure.
2. (Amended) The method defined in Claim 1 where the first directory structure comprises a hierarchy of documents mirroring in a similar fashion an organization in the second directory structure representing a pre-existing memory storing documents.
7. (Amended) The method defined in Claim 1 further comprising building the [pre-existing] first directory structure by building hierarchy of documents based on a user's hard drive.

8. (Amended) The method defined in Claim 1 further comprising building the [pre-existing] first directory structure by extracting graphical and text features from documents in a directory-based memory to obtain a document classification profile of each subdirectory in the directory-based memory.

9. (Amended) A software product including a machine-readable medium having stored thereon sequences of instructions, which, when executed by a processor, cause the processor to:

analyze textual content and graphical content of a previously unclassified electronic document to determine a textual profile and a graphical profile of the electronic document;

generate a classification of the document based on the textual profile and the graphical profile; [and]

store the electronic document in a [pre-existing] first directory structure based on the classification of the document and a document classification profile associated with the [pre-existing] first directory structure; and

wherein the first directory structure mirrors a second directory structure, and the document classification profile is defined according to [resemble] a classification approach of [the] a user with respect to the second directory structure.

13. (Amended) A method for document classification comprising:
analyzing documents in a pre-existing document directory structure to determine a document classification profile of the pre-existing document directory structure, the document classification profile of the pre-existing document directory structure

[indicating] reflecting a classification approach of a user with respect to the pre-existing document directory structure;

generating a mirror directory structure based on the pre-existing document directory structure;

receiving a previously unclassified electronic document;

analyzing textual content and graphical content of the electronic document to determine a textual profile and a graphical profile of the electronic document; and

placing the electronic document in the mirror directory structure based on the document classification profile of the pre-existing document directory structure, the textual profile of the document, and the graphical profile of the document to resemble the classification approach of the user.

19. (Amended) A computer-readable medium having stored thereon sequences of instructions which, when executed by a processor, cause the processor to:

analyze a pre-existing document directory structure to determine a document classification profile of the pre-existing document directory structure, the document classification profile of the pre-existing document directory structure [indicating] reflecting a classification approach of a user with respect to the pre-existing document directory structure;

generate a mirror directory structure based on the pre-existing document directory structure;

receive a previously unclassified electronic document;

analyze textual content and graphical content of the electronic document to determine a textual profile and a graphical profile of entire electronic document; and

place the electronic document in the mirror directory structure based on the document classification profile of the pre-existing document directory structure, the textual profile of the document, and the graphical profile of the document to resemble the classification approach of the user.

24. (Amended) An apparatus comprising:

means for analyzing a pre-existing document directory structure to determine document classification profile of the pre-existing document directory structure, the document classification profile of the pre-existing document directory structure [indicating] reflecting a classification approach of a user with respect to the pre-existing document directory structure;

means for generating a mirror directory structure based on the pre-existing document directory structure;

means for receiving a previously unclassified electronic document;

means for analyzing textual content and graphical content of the electronic document to determine a textual profile and a graphical profile of the electronic document; and

means for placing the electronic document in the mirror directory structure based on the document classification profile of the pre-existing document directory structure, the textual profile of the document, and the graphical profile of the document to resemble the classification approach of the user.

29. (Amended) A document processing system comprising:

a document scanning device;

a document storage device coupled to the document scanning device, wherein the document storage device is organized as a document directory structure having multiple directories, and further wherein the document storage device has a mirror directory structure having multiple directories organized based on the document directory structure; and

a processor coupled to the document scanning device and to the document storage device, wherein the processor [analyzes] is to analyze content of a document scanned by the document scanning device, [determines] to determine a directory in the mirror directory structure, in which the document [should] will be placed, based on the analysis of document content and a document classification profile of the document directory structure, the document classification profile being defined according to [resemble] a classification approach of [the] a user with respect to the document directory structure, and [stores] to store the document in the directory in the mirror directory structure.